

SURVEY METHODOLOGY AND DATA RELIABILITY

The 1995 National Survey of Recent College Graduates (NSRCG:95) is sponsored by the National Science Foundation (NSF), Division of Science Resources Studies (SRS). The NSRCG is one of three data collections covering personnel in science and engineering, which constitute the NSF's Scientists and Engineers Statistical Data System (SESTAT). Further information about the design, implementation, and results of the NSRCG:95 can be found in the *1995 National Survey of Recent College Graduates Methodology Report*.

The NSRCG used a two-stage sample design. In the first stage, a stratified nationally representative sample of 275 institutions was selected with probability proportional to size. Each sampled institution was asked to provide lists of graduates for sampling. The second stage of the sampling process involved selecting graduates within the sampled institutions by cohort. Eligible graduates were those who received bachelor's or master's degrees in the sciences and engineering from July 1992 through June 1994. Oversampling was employed to improve estimates for black, Hispanic, and Native American graduates. The overall sample size of graduates was 21,000.

The unweighted response rate for institutions was 97 percent, and the unweighted response rate for graduates was 86 percent. The weighted response rates were 97 and 83 percent, respectively. Thus, the net weighted response rate for the 1995 NSRCG was 81 percent, the product of rates at each stage of data collection. Interviews were completed for 16,340 graduates. The NSRCG:95 data were weighted to produce national estimates. The item nonresponse for this study was very low (typically about 1 percent) due to the use of CATI technology for data collection and data retrieval techniques for missing key items. However, imputation for item nonresponse was performed using a "hot-deck" method.

Different S&E fields were sampled at different rates, so weights were used to provide nationally representative estimates. The weights accounted both for the probability of selection and for survey nonresponse.

Standard errors for the survey were computed using a replication method known as jackknife replication. Tests of significance used in the analysis were based on Student's *t*. A Bonferroni adjustment was used to correct significance tests for multiple comparisons. The adjustment varied depending on the number of multiple comparisons involved (i.e., the number of categories in the specific questions examined, and the nature of the hypothesis being tested). Statements of differences in the text are significant at the 95 percent confidence level after the Bonferroni adjustment.

Table 1a. Standard errors for table 1: The relationship between recent science and engineering (S&E) graduates' degrees and their work, by graduates' undergraduate GPA and degree level

Undergraduate GPA	Number of cases	Relationship between work and education		
		Closely related	Some-what related	Not related
Bachelor's, total.....	9,460	0.68	0.56	0.84
3.75-4.0.....	931	1.89	1.60	1.60
3.25-3.74.....	2,892	1.27	1.19	1.19
2.75-3.24.....	4,133	1.11	0.96	1.32
Less than 2.75.....	1,504	1.71	1.79	1.74
Master's, total.....	4,718	0.72	0.64	0.43
3.75-4.0.....	1,001	1.60	1.43	0.68
3.25-3.74.....	1,810	1.21	1.00	0.83
2.75-3.24.....	1,507	1.36	1.33	0.78
Less than 2.75.....	400	2.57	2.73	1.77

SOURCE: National Science Foundation/Division of Science Resources Studies, National Survey of Recent College Graduates: 1995.

Table 2A. Standard errors for table 2: The employment and education status of science and engineering (S&E) graduates, by graduates' undergraduate GPA and degree level

Undergraduate GPA	Number of cases	Continuing in S&E		In school, not studying S&E		Not in school, other	
		In school, studying S&E*	Employed in S&E and not in school	Employed in S&E	Employed outside S&E or not employed	Employed outside S&E	Not employed
Bachelor's, total...	11,091	0.41	0.46	0.16	0.36	0.59	0.48
3.75-4.0.....	1,195	1.90	1.28	0.60	1.15	2.03	1.68
3.25-3.74.....	3,536	0.72	0.68	0.35	0.57	1.22	0.96
2.75-3.24.....	4,702	0.54	0.85	0.22	0.53	0.81	0.65
Less than 2.75.....	1,658	0.74	1.25	0.33	0.94	2.01	0.94
Master's, total.....	5,390	0.79	1.21	0.27	0.24	0.89	1.16
3.75-4.0.....	1,175	2.01	2.01	0.61	0.36	1.56	0.82
3.25-3.74.....	2,077	1.07	1.58	0.46	0.40	1.20	1.53
2.75-3.24.....	1,691	1.12	1.70	0.36	0.36	1.44	1.56
Less than 2.75.....	447	1.81	2.80	0.90	0.93	3.26	1.77

*Includes graduates who are employed, whether or not the employment is in S&E, as long as they are studying S&E in school. This definition is based on the assumption that the field being studied in school is a better indicator of future career plans than the current employment.

SOURCE: National Science Foundation/Division of Science Resources Studies, National Survey of Recent College Graduates: 1995.

Table 3A. Standard errors for table 3: Detailed correspondence between S&E major and continuing education or employment in S&E for all S&E graduates and for top S&E graduates, by degree level

S&E major	All graduates				Top graduates			
	Number of cases	In same field	In another S&E field	In non-S&E field	Number of cases	In same field	In another S&E field	In non-S&E field
Bachelor's, total.....	11,109	0.57	0.29	0.58	1,195	1.92	0.80	1.86
Computer sciences.....	574	2.54	1.02	2.43	73	6.79	2.57	6.96
Mathematics.....	525	1.45	1.79	2.44	71	4.49	7.04	7.18
Biological/								
life sciences.....	1,500	1.31	0.74	1.56	149	4.81	0.49	4.83
Physical sciences.....	1,166	1.83	1.10	1.83	180	4.69	3.09	4.25
Social/								
behavioral sciences....	4,038	1.05	0.30	1.02	409	3.90	0.96	3.94
Engineering.....	3,306	1.23	0.72	1.13	313	2.81	2.02	2.71
Masters', total.....	5,414	1.07	0.65	1.18	1,175	1.72	1.06	1.69
Computer sciences.....	350	2.58	1.61	2.51	86	4.80	2.66	4.35
Mathematics.....	299	3.21	2.29	3.06	100	4.82	3.93	4.84
Biological/								
life sciences.....	655	4.87	2.14	6.04	86	5.78	4.52	4.91
Physical sciences.....	764	1.75	1.58	1.43	190	3.84	2.73	3.12
Social/								
behavioral sciences....	1,582	1.64	0.51	1.55	336	3.84	0.79	3.86
Engineering.....	1,764	1.56	1.28	0.99	377	3.09	2.56	2.20

SOURCE: National Science Foundation/Division of Science Resources Studies, National Survey of Recent College Graduates: 1995.

Table 4A. Standard errors for table 4: Detailed correspondence between S&E major and continuing education or employment in S&E for top students in S&E graduates, by degree level

S&E major	Number of cases	Pursuing graduate education or employed							Outside of S&E ²
		In science or engineering							
		Total ¹	Com-puter sciences	Mathe-matics	Biological/ life sciences	Physical sciences	Social/ behavioral sciences	Engineer-ing	
Bachelor's, total.....	1,195	1.86	0.80	0.29	0.90	0.47	2.27	1.00	1.86
Computer sciences.....	73	6.96	6.79	0.00	0.00	0.00	0.00	2.57	6.96
Mathematics.....	71	7.18	4.68	4.49	3.64	2.68	2.22	2.91	7.18
Biological/ life sciences.....	149	4.83	2.74	0.00	4.81	0.39	0.01	0.06	4.83
Physical sciences.....	180	4.25	0.96	0.62	1.94	4.69	0.44	1.86	4.25
Social/ behavioral sciences...	409	3.94	0.80	0.00	0.17	0.00	3.90	0.54	3.94
Engineering.....	313	2.71	1.94	0.26	0.00	0.46	0.31	2.81	2.71
Masters', total.....	1,175	1.69	1.30	0.51	0.59	0.63	1.60	1.45	1.69
Computer sciences.....	86	4.35	4.80	0.00	0.00	0.00	0.00	2.66	4.35
Mathematics.....	100	4.84	2.48	4.82	1.05	1.33	0.54	1.93	4.84
Biological/ life sciences.....	86	4.91	1.29	0.00	5.78	3.05	1.34	3.22	4.91
Physical sciences.....	190	3.12	1.67	0.60	2.32	3.84	0.00	1.41	3.12
Social/ behavioral sciences...	336	3.86	0.42	0.33	0.54	0.21	3.84	0.00	3.86
Engineering.....	377	2.20	2.62	0.13	0.51	0.42	0.00	3.09	2.20

¹Includes graduates employed in natural sciences with no further specialization. Because of the small number of such graduates, they are not reported separately.

²Includes graduates who were neither employed nor in school as well as those who were employed or in school outside of S&E.

SOURCE: National Science Foundation/Division of Science Resources Studies, National Survey of Recent College Graduates: 1995.

Table 5A. Standard errors for table 5: Most important reason for working outside of highest degree field, by graduates' undergraduate GPA and degree level

Undergraduate GPA	Number of cases	Most important reason						
		Pay/promotion opportunities	Working conditions	Job location	Change in interest	Family-related	Job in field not available	Other
Bachelor's, total.....	2,454	1.22	0.81	0.72	0.94	0.51	1.09	0.59
3.75-4.0.....	151	4.21	3.38	3.22	3.95	3.20	3.85	1.66
3.25-3.74.....	683	2.67	1.40	1.29	1.54	0.95	2.28	1.07
2.75-3.24.....	1,148	1.60	1.07	1.19	1.39	0.75	1.59	0.98
Less than 2.75.....	472	2.66	1.63	1.86	1.86	0.81	2.81	1.32
Masters', total.....	421	2.50	1.72	1.28	1.95	1.79	2.87	1.34
3.75-4.0.....	80	4.65	3.37	3.71	4.69	3.83	6.40	1.00
3.25-3.74.....	151	3.25	3.22	2.47	3.62	2.86	4.20	2.52
2.75-3.24.....	146	4.23	3.16	1.35	2.69	3.09	3.86	2.79
Less than 2.75.....	44	8.39	0.54	3.44	5.18	4.63	9.71	0.89

SOURCE: National Science Foundation/Division of Science Resources Studies, National Survey of Recent College Graduates: 1995.